

DOCUMENT RESUME

ED 230 780

CE 036 257

TITLE Research Project on Occupational Knowledge and Sex-Role Stereotyping of Limited English-Proficiency Students. Final Report 1981-82.

INSTITUTION Bound Brook Board of Education, NJ.

SPONS AGENCY New Jersey State Dept. of Education, Trenton. Div. of Vocational Education and Career Preparation.

PUB DATE 82

NOTE 35p.

PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PCG2 Plus Postage.

DESCRIPTORS Adult Education; Adults; *Attitude Change; *Career Awareness; Influences; Instructional Materials; *Limited English Speaking; Material Development; *Occupational Information; Pretests Posttests; Sex Bias; *Sex Stereotypes; Student Attitudes; Vocational Education

IDENTIFIERS New Jersey

ABSTRACT

A research project focused on the development and use of sex-fair occupational knowledge materials with a sample of limited English-proficient students. First, researchers examined existing instructional materials from vocational education sources in order to identify materials that are written on a level appropriate for limited English-proficient students and that are free of sex-role stereotypes. During the second phase of the project, 23 adult students who were attending a Comprehensive Employment and Training Act sponsored English-as-a-Second-Language (ESL) program in South Bound Brook, New Jersey were given basic career education instruction. The treatment group was taught using materials identified as sex-fair during the first phase of the study. Each subject was given a pretest and a posttest to determine his or her awareness of job titles and training involved as well as attitudes as to whether the job could be performed by either a man or a woman. Because members of the treatment group increased their scores by a fairly wide margin on the occupational and sex bias test, it would appear that the instruction did have an effect. Other factors that seemed to be associated with increased occupational knowledge and bias-free attitudes were level of education obtained and geographic location of the student's native country. (MN)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED230780

MS8113101

SREG-203

FINAL REPORT
OF
RESEARCH PROJECT ON OCCUPATIONAL KNOWLEDGE AND SEX-ROLE STEREOTYPING OF
LIMITED ENGLISH-PROFICIENCY STUDENTS

1981-82

Jointure for Community Adult Education
West Union Avenue
Bound Brook, New Jersey 08805
(201) 469-2424

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- ☒ This document has been reproduced as received from the person or organization originating it.
- ☐ Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

LT Price

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Project Director
James Baer
Basic Skills Supervisor

Jean Schmidt - Counselor
Joyce Dennis - Statistical
Consultant

CE 036257

This project reported herein was conducted pursuant to a contract from the New Jersey Department of Education, Division of Vocational Education and Career Preparation. It was funded under Sections 219/203 of Public Law 94-482.

Project Duration:

July 1, 1981
Beginning Date

June 30, 1982
Ending Date

The Contractors undertaking this project were encouraged to express fully their judgments in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official funding agency positions or policies.

OFFICIAL USE ONLY

IDENTIFICATION NO. _____

AMOUNT FUNDED _____

FUNDED UNDER SECTION _____ OF P. L. 94-482

PROJECT TITLE: Research Project on Occupational Knowledge and Sex-Role
Stereotyping of Limited English-Proficiency Students

LEGAL NAME OF APPLICANT
DISTRICT, INSTITUTION OR
AGENCY:

Bound Brook Board of Education

ADDRESS:

133 West Maple Ave.

Bound Brook, New Jersey 08805

PROJECT DIRECTOR:

James Baer

TELEPHONE NUMBER:

(201) 469-5734

(Area Code)

ABSTRACT

DESCRIPTION OF PROJECT

(Use this sheet and no more than one other to type in single-spaced form a statement of project objectives, procedures that were followed, state and local priorities emphasized and the expected contribution of the project to vocational education.)

Adult refugees and other limited English-proficiency students enrolled in language manpower training programs in the Bound Brook area often make vocational decisions based upon limited occupational knowledge and sex-role stereotypes.

Teachers and counselors of these adult students do not have materials which will assist this population in acquiring vocational/occupational information which is appropriate for the limited English-proficiency student and free from sex-role stereotypes.

The objective of this project is to conduct research on the development and use of occupational knowledge materials with a sample population of limited English-proficiency adults.

The first part will address the priority A.4, the examination of current curriculum materials to assure that they are free of sex stereotyping. The second part will address priority B.6, a survey of sex role attitudes among students who are from other cultures.

The research hypothesis is that limited English-proficiency adults who are exposed to vocational education materials which seek to acquaint them with vocational possibilities in a non sex-role stereotyped manner will increase their knowledge of jobs and training available and alter preconceptions about careers which are based upon sex-role stereotypes.

It is expected that the information gathered by this research project will assist in the development of curriculum for limited English-proficiency students which will reduce sex-role stereotypes and allow them to take the fullest advantage of job opportunities.

TABLE OF CONTENTS

- I. IDENTIFICATION OF PROBLEM
- II. BACKGROUND
- III. RESEARCH METHOD AND DESIGN
- IV. SUBJECTS
- V. PROCEDURE
 - A. Pre-and Post-Tests
 - B. Instructional Intervention
 - 1. Discussion of Goals
 - 2. Filmstrips
 - 3. Field Trip
 - 4. Discussion of Occupational Handbook Pictures
 - 5. ESL Instruction
- VI. RESEARCH DATA
- VII. RESEARCH FINDINGS
 - A. Knowledge of Job Titles and Training
 - B. Sex Bias
- VIII. Conclusion
- APPENDIX

FINAL REPORT

RESEARCH PROJECT ON OCCUPATIONAL KNOWLEDGE AND SEX-ROLE STEREOTYPING OF LIMITED ENGLISH-PROFICIENCY STUDENTS

I. IDENTIFICATION OF PROBLEM

Adult refugees and other limited English-proficiency students who are enrolled in language manpower training programs in the Bound Brook area often make vocational decisions based upon limited occupational knowledge and sex-role stereotypes. An Asian woman will not allow herself to consider the full range of occupations open to her. A South American woman will feel that the only non-factory job she should train for is as a bilingual secretary. Men from Southeast Asia often will not work with a female supervisor.

The ESL teachers and vocational counselors who work with this population do not have sufficient information about the problem. Do these adult ESL students increase their occupational knowledge as they spend more time in the United States and learn more about this country in general? Do they normally acquire this information in ESL classes? To what extent does background, culture, and education influence adults' choice of occupations in this country? Do sex-role stereotypes limit the range of occupations these students might pursue in this country? And, finally, to what extent can these limitations be overcome by using materials designed to increase occupational knowledge in a way that will reduce sex-role stereotypes?

Throughout this project several problems became evident. There is a lack of materials for limited English-speaking adults other than Spanish. While there is a quantity of material for bilingual instruction for Spanish-speaking people there is little else for those whose first language is neither Spanish or English and who need information concerning jobs and future training. Materials had to be adapted or developed. e.g. The English narrative on the tapes to be used with the filmstrips had to be ignored and new narrative pertaining to these jobs had to be developed for limited English-speakers.

The Occupational Handbook as well as all the other references could not be used as such because of the extensive vocabulary beyond most limited English-speakers.

For many people from other cultures the idea of such introspective thinking to establish a long-range goal was a difficult task. It was not possible to imagine a five year plan. Immediate problems such as housing and health are more acute and need to be dealt with. In many countries, where choice of a career was not a possibility, the idea of being forced to think in terms of a future career was a difficult task.

Because we were dealing with people from many different countries, the idea of sex stereotyping/sex bias has different meanings. e.g. In most foreign countries doctors and nurses are male as well as female; women as well as men are factory workers; women as well as men own or manage stores, control money. Are we injecting our sex stereotyping/sex bias into people from other cultures with materials that teach occupational awareness?

II. BACKGROUND

The first step in this process was the development of an assessment instrument to help teachers and counselors work with students to determine a direction for vocational training. A grant from the New Jersey State Department of Education, Division of Vocational Education and Career Preparation aided us in bringing together a committee of guidance counselors, ESL instructors and vocational teachers to design an assessment instrument. This instrument included information on skills, likes and dislikes, and gave the counselor an opportunity to discuss career goals with students.

As a result of this project it was discovered that adult students in manpower ESL classes knew very little about occupations in this country. They had a difficult time discussing occupations because they did not have enough information about the range of occupations, their duties, training needed or appropriateness for their situation. Our feeling was that these students restricted themselves to jobs they had heard about, such as auto mechanic or electronic assembler and to jobs they thought would be appropriate for their sex.

III. RESEARCH METHOD AND DESIGN

We developed a hypothesis that limited English-proficiency adult students who are exposed to vocational education materials which seek to acquaint them with vocational possibilities in a non sex-role stereotyped manner will increase their knowledge of jobs and training available, and alter career preconceptions based upon sex-role stereotypes.

There were two major objectives to this project. The first was to gather some representative materials from vocational education sources, such as those at Ohio State University. These materials would be reviewed for appropriateness of language for limited English-proficiency students at the adult level, and for sex-role stereotypes. Those found to be appropriate and not stereotyped would be used in the second phase of the project.

The second major objective was a research module to test our hypothesis. This was done by designing a twenty-hour intervention which would integrate materials on occupational knowledge with existing ESL classes. The research design called for two groups. One was to be a control group which would receive no intervention. This would help determine how much change would occur in a regular ESL class. The other group was to have twenty hours of instruction. Both groups were to be given a pre- and post-test on occupational knowledge and sex-role stereotyping.

IV. SUBJECTS

The twenty-three subjects for this research study were adult students attending a CETA-sponsored manpower English As A Second Language Program in South Bound Brook, New Jersey. There were twelve female and eleven male subjects, ranging in age from 19 years to 48 (MEAN 30.43; SD 7.50). These students were divided into two groups. The first was comprised of seven intermediate-level students who were in attendance in the fall of 1981. The second group was comprised of beginners and high beginners who were in attendance in the winter and spring of 1982.

The length of time they had lived in the United States varied greatly, from 3 months to 7 years (MEAN 17.5 months; SD 19.9). Thirteen were recent immigrants living in the U.S. for less than 1 year, four had lived here between 1 and 2 years, four between two and four years, one almost five years, and one had lived in the U.S. for seven years when the project began.

The original intent of our research design was to have the first group serve as a control group. They would receive regular instruction in English and manpower-related areas. The second group was to receive the same instruction plus twenty hours of intervention based upon materials designed during the first phase of the project.

We were unable to use the first group as a control. Due to the limitations of numbers of subjects and their levels of English we found that the two groups were very different. The first group, which received no intervention, had a higher level of English upon entering the program. They scored an average of 63 correct out of 100 on our English proficiency tests whereas the second group scored a 45. This was to have an effect on measures of occupational knowledge, as discussed below.

The second area in which these two groups differed was in level of education attained in their native country. The first group had an average of 13 years of education with a range from 10 to 17 years. The second group had an average of 9 years of education and a range of zero to 14 years.

In most other respects the two groups were similar. There were roughly equal numbers of men and women in each group. They came from

a variety of backgrounds and countries: Asia, Europe and Latin America. Most of the subjects were in their twenties and thirties, and had never been employed in this country.

V. PROCEDURE

All subjects participated in a daily class of three hours instruction in English As A Second Language and manpower-related materials. Students, at entry, were tested on the Marano Passive Grammar Test and the John Oral Proficiency Test. Students were placed in beginning or intermediate groups, according to their test results and taught vocabulary, oral skills, pronunciation and structures appropriate for that level. In addition, since the class is funded by CETA for employment training, all students receive approximately three to five hours weekly of manpower related instruction. For example, they learn how to fill out job applications, call for information about a job, describe previous work history and go for a job interview.

All subjects in both groups were given a pre- and post-test to determine their awareness of job titles and training involved and their attitude as to whether the job could be performed by either a man or woman. (See Appendix II)

A. Pre- and Post-Tests

In designing a pre- and post-test to estimate the occupational knowledge of limited English-proficiency students, we chose twenty five pictures from the Janus Job Interview Kit, published by Janus Book Publishers, Hayward, California. These pictures show individuals performing such tasks as typing, cooking, teaching, road paving, etc.

The test was divided into two sections:

1. Occupational awareness was assessed by asking the students to identify the job title and the amount of training required to perform/to be hired for the job (none, up to one year, one year or more). Our experience in working with these people indicated to us that if they were unable to identify the job either by title or description they were unaware of that particular job and by the same token if they knew any title or description we assumed they had some knowledge of the duties and training involved.
2. Sex-role stereotyping was assessed by asking the students to indicate if this job could be performed by a man, a woman, or either.

To score Section A, three points were given for an exact job title or one or two points for a closely descriptive title and an additional point for the correct amount of training determined for each job title allowing a possible score of 100 points.

To score Section B, a possible 100% could be achieved if each job was determined as being performed by both a man or a woman. The percentage was derived by dividing the number of occupations indicated as possible for either sex to perform by the total number answered by the student. The higher the percentage the less sex-role stereotyped the student responses.

B. Instructional Intervention

Following the pre-test, a twenty hour instructional program

was developed:

1. Discussion of goals: two sessions one hour each
 2. Filmstrips: seven sessions, one hour per week
 3. Field trip: two hours
 4. Discussions of pictures: five hours
 5. ESL: four hours.
1. Discussion of goals - long range and short range - emphasizing the need to plan for the future in terms of careers. This discussion centered around jobs presently being performed by members of the group, their relatives and friends either in the United States or in their native countries. Included were job duties, training and the sex-roles inherent in the job performed. For example, since the individuals in this group were adults, most had been employed in their own country or might at some time or another have had a job in the United States. They were teachers, nurses, chemists, farmers, fishermen. To what degree was training necessary? Formal education? What were the job duties? Could a man do this as well as a woman and vice-versa? Why or why not? Through this discussion, a goal and a method of reaching it were defined.
 2. Filmstrips. Livelihoods, Careers for You: Life Style by S. Norman Feingold, Houghton Mifflin, Boston, is a series of filmstrips and tapes on occupational areas

including construction, manufacturing, health, business, communication, fine arts, transportation, the environment and others. Discussion followed each session concerning training, salary, previous education and the outlook for the future. Included, too, was a discussion of sex roles in each area and stress placed on the importance of qualifications and duties rather than the sex stereotyped male/female job. This series of filmstrips included mostly non-traditional jobs. e.g. transportation - test car driver; communication-interpreter; fine arts - floral designer. In each case the traditional jobs were discussed as well.

3. Field Trip. The group took a field trip through Towne Laboratories, a manufacturing company specializing in chemical miniaturization observing not only the many jobs in clerical, laboratory, quality control, photography, but also the mix of male/female performance as well as training and education required to apply for these jobs. This was a chance to see first-hand traditional as well as more unusual occupations and to begin to explore ways to use or adapt their skills or to develop new skills.
4. Occupational Handbook Pictures. This is a set of thirty-eight 4 x 6 pictures developed from the Occupational Handbook covering selections from the thirteen job clusters and reflecting occupations in office skills,

laboratory occupations, restaurant, education opportunities, merchandising, crafts, etc.; all occupations within the range of possibility for someone with limited English. The reverse of each picture listed the job duties for that particular occupation. These pictures were used for discussion, games, etc. by the ESL teacher.

5. ESL Instruction.

This instruction involved:

- a. General English vocabulary necessary to express likes and dislikes concerning jobs; their capabilities in considering employment and in seeking information about jobs; asking questions in their search for employment and future training.
- b. Listening exercises, drills in structures, general vocabulary using such structures as "I know/I want to know, I would rather/I would like" in relation to employment and training.
- c. Vocabulary and language structure necessary for job interviews.

V. RESEARCH DATA

There were nine variables in this study. A background page listed the age of each subject, months in residence in the United States, years of education in native country and proficiency in English when

entering the program. The counselor kept a record of the hours of instruction, and scores on the occupational knowledge pre- and post-tests.

The control group included 7 people, while the treatment group had 16. They were roughly the same ages (Treatment: MEAN 29.56, SD 8.11, Control: MEAN 32.43, SD 5.91) and men and women evenly distributed in both groups. However, the educational level of the control group was significantly higher (MEAN 13.29, SD 3.04) than the treatment group (MEAN 9.44, SD 3.41) at the .01 significance level. As would be expected given the close correlations, the English proficiency level of the control group (MEAN 63.14, SD 20.05) was higher than the treatment group (MEAN 45.88, SD 14.91) at the .05 significance level. Consequently it is difficult to make comparisons between the two groups and draw conclusions about the effect of treatment versus non-treatment since hours of instruction seems to be less closely related to scores on the occupational post test ($r = -.13$) than were educational level or English proficiency. However, hours of instruction were more closely associated with the sex-bias post test ($r = .39$) although the relationship was not quite significant at the .05 level (.062).

Pearson product moment correlations between all of the student demographic characteristics, pre- and post-tests were computed for the total sample. Significant correlations were found between educational level and months in the U.S. ($r = .40$; significant at the .05 level), and between educational level and proficiency in English

($r = .62$, significant at the .001 level). There was also a significant correlation between educational level and occupational pre-test ($r = .499$; sig. at .01 level), but not between educational level and the occupational post-test ($r = .23$), sex pre-test ($r = .048$) or the sex post-test ($r = .13$). Proficiency in English also correlated highly with both the occupational pre-test ($r = .56$, sig. at .005) and the occupational post-test ($r = .60$, sig. at .002), but with neither the sex pre-test ($r = .24$) nor the sex post-test ($r = .08$).

The positive correlations between number of years of education and proficiency in English, and the occupational tests, but the absence of a significant relation between length of time in the U.S. and the occupational pre-test ($r = -.24$) and the occupational post-test ($r = -.38$) and sex pre-test ($r = .14$) and the post sex test ($r = -.06$) suggests that the more education an adult has had in combination with a higher English proficiency level is more likely to be associated with greater occupational awareness as measured by our picture test than length of time living in the U.S.

VI. RESEARCH FINDINGS

A. Knowledge of Job Titles and Training.

The findings of this research project are not conclusive. The total number in each group was small and the two groups were too different to compare. However, there are several areas of interest which this study uncovered. First, the higher levels of education and proficiency in English seem to correlate with a better understanding

of job titles and training. Students who had more education in their native country and knew more English were more likely to have more opportunities for making occupational choices. Either they came from middle class backgrounds, or they lived in a country which provided for occupational choices. In any event, they seemed to be able to score better on a test which asked them to name the occupation and indicate whether or not training is necessary. (MEAN 47.43, SD 12.24). Even after up to twenty hours of intervention, students with lower educational levels and English proficiency still scored slightly less than the first group on the post-test. (MEAN 32.31, SD 8.32).

However, after the instructional program designed to increase students' knowledge of occupations, including the job title and level of training required to perform the job, the scores of the treatment group on the occupational post-test showed an increase of 10.31 points (MEAN 42.65, SD 9.24) while the first group's score improved by only .85 (MEAN 48.28, SD 11.98).

B. Sex Bias.

The second, and probably most striking, finding of our research project was in the area of sex-role stereotyping. This was a complex issue because we were dealing with so many cultures. Students from Latin America and Asia were used to seeing women dentists, doctors and other professionals. Students from Eastern Europe did not find it surprising to see women laborers or machine operators, while those from Southeast Asia were unaccustomed to thinking of women in certain manufacturing or

technical occupations.

The levels of education, however, and proficiency in English were not as important in determining the scores on the sex-bias pre-and post-tests. The results of the pre- and post-tests on sex bias also showed greater increases for the treatment than control groups. While there was less difference between the scores of the control group (MEAN 71.29, SD 11.40) and the treatment group on the pretest (MEAN 68.56, SD 17.59) results suggested the instruction seemed to have a significant influence on the post-test scores. The control group post-test scores showed a moderate increase to a mean of 76.14 (SD 12.68), while the treatment groups scores increased more dramatically (up 13 points) to a MEAN of 82.63 (SD 9.24).

Because these treatment and control groups contain adults with widely differing characteristics that seem to influence their occupational awareness test scores, no computer analyses were conducted on the significance of the different increases between the groups. However, since the treatment group increased their scores by a fairly wide margin in the occupational text post and the sex bias post-test, one feels confident in saying that the instruction did have an effect.

VII. CONCLUSIONS

The anticipated research design of a control and treatment group with similar characteristics was not obtained. Instead, we had two

groups with some significant differences. Nevertheless, the pre- and post-tests of occupational knowledge and sex-role stereotyping indicated that our intervention did have an effect.

Our original hypothesis should be taken as two parts: first, regarding increased knowledge of occupations and; second, a reduction of sex-role stereotyping. The higher level of education and proficiency in English in our control group leads to the conclusion that students may, indeed, learn more about occupations once they have more knowledge of English. Our hypothesis was not borne out by our research.

The second aspect, however, seems to be borne out. Students who learn more about occupations in a manner free from sex-role stereotyping do seem to respond in a less sex-role stereotyped manner. Our group was small, however, and such attitudes are difficult to measure exactly. Also, students from such diverse backgrounds may not have shared our sex-role stereotypes to begin with. In this respect the danger is in teaching adult ESL students our stereotypes as we present materials to them. This conclusion leads to the need to develop materials appropriate for adult ESL students which are integrated into ESL instruction and free from sex-role stereotypes. As limited as our research project was in numbers of subjects and hours of instruction we did see a significant change as the result of instructional intervention.

V
APPENDIX I

OCCUPATIONAL KNOWLEDGE AND SEX STEREOTYPING

13:30 WEDNESDAY, JUNE 16, 1982

1

OBS	SUBJ	AGE	SEX	MO	CO	ED	HRS	OCPRE	OCPOS	SXPRE	SXPOS	XPRE	XPOS	PROF	TREAT
1	1	25	F	9	5	16	0	45	45	80	92	20	23	61	0
2	2	33	M	4	2	17	0	49	59	83	84	20	21	90	0
3	3	33	F	4	2	16	0	53	43	56	56	14	14	76	0
4	4	32	M	19	1	11	0	68	58	75	68	18	17	61	0
5	5	44	F	12	1	13	0	47	56	82	84	18	21	78	0
6	6	28	M	8	1	10	0	43	52	64	67	14	16	42	0
7	7	43	M	38	4	8	8	32	23	59	78	10	14	35	1
8	8	36	F	57	4	8	19	36	40	75	76	15	16	54	1
9	9	48	F	26	5	13	20	21	36	46	87	11	20	52	1
10	10	19	F	5	1	11	20	38	46	70	77	15	17	54	1
11	11	25	M	18	1	12	20	39	57	55	78	12	18	52	1
12	12	26	M	4	4	9	19	34	54	75	95	17	21	80	1
13	13	23	F	6	1	10	19	40	50	80	82	17	18	53	1
14	14	24	M	6	4	12	20	46	45	88	91	22	20	30	1
15	15	24	M	15	1	0	15	25	49	45	65	10	15	22	1
16	16	25	F	30	1	9	14	28	33	65	67	11	12	23	1
17	17	28	M	6	1	11	20	25	38	86	96	18	23	36	1
18	18	24	M	7	1	6	20	23	36	83	94	19	16	41	1
19	19	32	M	30	1	10	2	27	25	59	82	13	18	34	0
20	20	34	F	84	4	6	19	29	41	96	87	23	29	44	1
21	21	29	F	6	3	11	16	19	35	44	81	11	17	44	1
22	22	26	F	3	3	11	20	44	56	85	80	19	20	63	1
23	23	39	F	6	1	14	20	38	43	45	88	9	22	51	1

OCCUPATIONAL KNOWLEDGE AND SEX STEREOTYPING

13:30 WEDNESDAY, JUNE 16, 1982 2

VARIABLE	N	MEAN	STD DEV	MEDIAN	MINIMUM	MAXIMUM
AGE	23	30.43478261	7.50046112	28.00000000	19.00000000	48.00000000
MO	23	17.52173913	19.85600336	8.00000000	3.00000000	84.00000000
ED	23	10.60869565	3.70183162	11.00000000	0	17.00000000
HRS	23	12.65217391	8.80913109	19.00000000	0	20.00000000
OCPRE	23	36.91304348	11.77405871	38.00000000	19.00000000	68.00000000
OCPOS	23	44.34782609	10.22745279	45.00000000	23.00000000	59.00000000
SXPRES	23	69.39130435	15.74728276	75.00000000	44.00000000	96.00000000
SXPOS	23	80.65217391	10.5551857	82.00000000	56.00000000	96.00000000
XPRE	23	15.47826087	4.12166742	15.00000000	9.00000000	23.00000000
XPOS	23	18.60869565	3.75062577	18.00000000	12.00000000	29.00000000
PROF	23	51.13043478	18.08893270	52.00000000	22.00000000	90.00000000

PEARSON CORRELATION COEFFICIENTS / PROB > |R| UNDER H0: RHO=0 / N = 23

	AGE	MO	ED	HRS	OCPRE	OCPOS	SXPRES	SXPOS	XPRE	XPOS	PROF
AGE	1.00000 0.0000	0.36527 0.0865	0.22250 0.3075	-0.24320 0.2635	-0.01860 0.9329	-0.24619 0.2575	-0.24511 0.2596	0.03013 0.8915	-0.25258 0.2449	0.14851 0.4989	-0.21565 0.3230
MO MONTHS IN USA	0.36527 0.0865	1.00000 0.0000	-0.40338 0.0563	0.10789 0.6241	-0.24478 0.2603	-0.38100 0.0729	0.13640 0.5349	-0.05917 0.7886	0.04569 0.8360	0.20794 0.3410	-0.27583 0.2027
ED EDUCATION	0.22250 0.3075	-0.40338 0.0563	1.00000 0.0000	-0.38211 0.0720	0.49872 0.0154	0.23307 0.2845	0.04797 0.8279	0.12548 0.5683	0.15880 0.4692	0.21764 0.3185	-0.61851 0.0017
HRS HOURS OF INSTRUCTION	-0.24320 0.2635	0.10789 0.6241	-0.38211 0.0720	1.00000 0.0000	-0.54329 0.0074	-0.13078 0.5520	0.01315 0.9525	0.39460 0.0624	-0.06281 0.7759	0.15666 0.4753	-0.34400 0.1080
OCPRE OCCUPATION PRETEST	-0.01860 0.9329	-0.24478 0.2603	0.49872 0.0154	-0.54329 0.0074	1.00000 0.0000	0.64876 0.0008	0.30688 0.1544	-0.31845 0.1386	0.37649 0.0766	0.00434 0.9843	-0.56050 0.0054
OCPOS OCCUPATION POSTEST	-0.24619 0.2575	-0.38100 0.0729	0.23307 0.2845	-0.13078 0.5520	0.64876 0.0008	1.00000 0.0000	0.28953 0.1802	-0.08683 0.6936	0.38514 0.0696	0.23004 0.2910	-0.60465 0.0023
SXPRES SEXBIAS PRETEST	-0.24511 0.2596	0.13640 0.5349	0.04797 0.8279	0.01315 0.9525	0.30688 0.1544	0.28953 0.1802	1.00000 0.0000	0.42444 0.0435	0.93402 0.0001	0.48833 0.0181	-0.23742 0.2754
SXPOS SEXPOSTEST	0.03013 0.8915	-0.05917 0.7886	0.12548 0.5683	0.39460 0.0624	-0.31845 0.1386	-0.08683 0.6936	0.42444 0.0435	1.00000 0.0000	0.43445 0.0383	0.67955 0.0004	-0.07905 0.7200

OCCUPATIONAL KNOWLEDGE AND SEX STEREOTYPING

13 30 WEDNESDAY, JUNE 16, 1982

PEARSON CORRELATION COEFFICIENTS / PROB > |R| UNDER H0:RHO=0 / N = 23

	AGE	MO	ED	HRS	OCPRE	OCPOS	SXPRE	SXPOS	XPRE	XPOS	PROF
PROF	0.21565	-0.27583	0.61851	-0.34400	0.56050	0.60465	0.23742	0.07905	0.33688	0.27481	1.00000
ENGLISH PROFICIENCY	0.3230	0.2027	0.0017	0.1080	0.0054	0.0023	0.2754	0.7200	0.1160	0.2044	0.0000

SPEARMAN CORRELATION COEFFICIENTS / PROB > |R| UNDER H0:RHO=0 / N = 23

	AGE	MO	ED	HRS	OCPRE	OCPOS	SXPRE	SXPOS	XPRE	XPOS	PROF
AGE	1.00000	0.33882	0.22816	-0.28039	0.02256	-0.19147	-0.17577	0.02109	-0.19567	0.17290	0.23289
	0.0000	0.1138	0.2951	0.1950	0.9186	0.3815	0.4224	0.9239	0.3709	0.4302	0.2849
MO	0.33882	1.00000	-0.44954	-0.16287	-0.32977	-0.43046	-0.15268	-0.19960	-0.23747	-0.20495	-0.45684
MONTHS IN USA	0.1138	0.0000	0.0314	0.4578	0.1244	0.0403	0.4868	0.3612	0.2753	0.3482	0.0284
ED	0.22816	-0.44954	1.00000	-0.12501	0.54981	0.34331	-0.04614	0.17095	0.13087	0.40816	0.51894
EDUCATION	0.2951	0.0314	0.0000	0.5698	0.0066	0.1088	0.8344	0.4355	0.5517	0.0532	0.0112
HRS	-0.28039	-0.16287	-0.12501	1.00000	-0.42632	-0.15589	0.10412	0.39749	-0.01896	0.21794	-0.23179
HOURS OF INSTRUCTION	0.1950	0.4578	0.5698	0.0000	0.0425	0.4775	0.6364	0.0603	0.9316	0.3178	0.2872
OCPRE	0.02256	-0.32977	0.54981	-0.42632	1.00000	0.70930	0.30659	-0.19896	0.42709	0.12401	0.60292
OCCUPATION PRETEST	0.9186	0.1244	0.0066	0.0425	0.0000	0.0001	0.1548	0.3628	0.0421	0.5729	0.0024
OCPOS	-0.19147	-0.43046	0.34331	-0.15589	0.70930	1.00000	0.24653	-0.08913	0.38263	0.27698	0.62376
OCCUPATION POSTEST	0.3815	0.0403	0.1088	0.4775	0.0001	0.0000	0.2568	0.6859	0.0715	0.2007	0.0015
SXPRE	-0.17577	-0.15268	-0.04614	0.10412	0.30659	0.24653	1.00000	0.47683	0.92101	0.17039	0.19400
SEXBIAS PRETEST	0.4224	0.4868	0.8344	0.6364	0.1548	0.2568	0.0000	0.0214	0.0001	0.0235	0.3751
SXPOS	0.02109	-0.19960	0.17095	0.39749	-0.19896	-0.08913	0.47683	1.00000	0.45967	0.77568	0.07650
SEXPOSTEST	0.9239	0.3612	0.4355	0.0603	0.3628	0.6859	0.0214	0.0000	0.0273	0.0001	0.7286
XPRE	-0.19567	-0.23747	0.13087	-0.01896	0.42709	0.38263	0.92101	0.45967	1.00000	0.51919	0.36700
ACTUAL SEXPRETEST	0.3709	0.2753	0.5517	0.9316	0.0421	0.0715	0.0001	0.0273	0.0000	0.0111	0.0850
XPOS	0.17290	-0.20495	0.40816	0.21794	0.12401	0.27698	0.47039	0.77568	0.51919	1.00000	0.33541
ACTUAL SEXPOSTEST	0.4302	0.3482	0.0532	0.3178	0.5729	0.2007	0.0235	0.0001	0.0111	0.0000	0.1177
PROF	0.23289	-0.45684	0.51894	-0.23179	0.60292	0.62376	0.19400	0.07650	0.36700	0.33541	1.00000
ENGLISH PROFICIENCY	0.2849	0.0284	0.0112	0.2872	0.0024	0.0015	0.3751	0.7286	0.0850	0.1177	0.0000

TTEST PROCEDURE

VARIABLE: AGE

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	32.42857143	5.11205387	2.23454633	25.00000000	44.00000000	UNEQUAL	0.9496	15.7	0.3567
1	16	29.56250000	8.11557145	2.02889286	19.00000000	48.00000000	EQUAL	0.8375	21.0	0.4118

FOR HO: VARIANCES ARE EQUAL, F' = 1.88 WITH 15 AND 6 DF PROB > F' = 0.4465

VARIABLE: MO MONTHS IN USA

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	12.28571429	9.35796071	3.53697669	4.00000000	30.00000000	UNEQUAL	-1.1182	21.0	0.2761
1	16	19.81250000	22.90915028	5.72728757	3.00000000	84.00000000	EQUAL	-0.8306	21.0	0.4118

FOR HO: VARIANCES ARE EQUAL, F' = 5.99 WITH 15 AND 6 DF PROB > F' = 0.0363

VARIABLE: ED EDUCATION

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	13.28571429	3.03942350	1.14879410	10.00000000	17.00000000	UNEQUAL	2.6913	12.8	0.0187
1	16	9.43750000	3.40526553	0.85131638	0.00000000	14.00000000	EQUAL	2.5695	21.0	0.0179

FOR HO: VARIANCES ARE EQUAL, F' = 1.26 WITH 15 AND 6 DF PROB > F' = 0.8259

VARIABLE: HRS HOURS OF INSTRUCTION

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	0.28571429	0.75592895	0.28571429	0.00000000	2.00000000	UNEQUAL	-20.2734	18.1	0.0001
1	16	18.06250000	3.31599658	0.82899915	8.00000000	20.00000000	EQUAL	-13.8542	21.0	0.0001

FOR HO: VARIANCES ARE EQUAL, F' = 19.24 WITH 15 AND 6 DF PROB > F' = 0.0015

VARIABLE: OCPRE OCCUPATION PRETEST

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	47.42857143	12.24550452	4.62836566	27.00000000	68.00000000	UNEQUAL	2.9792	8.5	0.0165
1	16	32.31250000	8.31639946	2.07909987	19.00000000	46.00000000	EQUAL	3.4731	21.0	0.0023

FOR HO: VARIANCES ARE EQUAL, F' = 2.17 WITH 6 AND 15 DF PROB > F' = 0.2101

TTEST PROCEDURE

VARIABLE: OCPDS OCCUPATION POSTEST

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	48.28571429	11.99603109	4.53407357	25.00000000	59.00000000	UNEQUAL	1.1123	9.3	0.2941
1	16	42.62500000	9.24391692	2.31097923	23.00000000	57.00000000	EQUAL	1.2359	21.0	0.2301

FOR HO: VARIANCES ARE EQUAL, F' = 1.68 WITH 6 AND 15 DF PROB > F' = 0.3860

VARIABLE: SXPRE SEXBIAS PRETEST

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	71.28571429	11.39757702	4.30787919	56.00000000	83.00000000	UNEQUAL	0.4424	17.4	0.6636
1	16	68.56250000	17.58775616	4.39693904	44.00000000	96.00000000	EQUAL	0.3741	21.0	0.7121

FOR HO: VARIANCES ARE EQUAL, F' = 2.38 WITH 15 AND 6 DF PROB > F' = 0.2912

VARIABLE: SXPOS SEXPOSTEST

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	76.14285714	12.68106951	4.79299375	56.00000000	92.00000000	UNEQUAL	-1.2182	8.9	0.2544
1	16	82.62500000	9.24391692	2.31097923	65.00000000	96.00000000	EQUAL	-1.3830	21.0	0.1812

FOR HO: VARIANCES ARE EQUAL, F' = 1.88 WITH 6 AND 15 DF PROB > F' = 0.3002

VARIABLE: XPRES ACTUAL SEXPRETEST

TREAT	N	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	VARIANCES	T	DF	PROB > T
0	7	16.71428571	2.98408477	1.12787803	13.00000000	20.00000000	UNEQUAL	1.1143	17.1	0.2806
1	16	14.93750000	4.50878772	1.12719693	9.00000000	23.00000000	EQUAL	0.9491	21.0	0.3533

FOR HO: VARIANCES ARE EQUAL, F' = 2.28 WITH 15 AND 6 DF PROB > F' = 0.3156

A P P E N D I X II

Answer Sheet

Name _____

Date _____

Male _____ Female _____

Country _____

What is this job?	Can _____ do it?			Do you need training?.		
	a man	a woman	either	no	yes, up to 1 year	yes, 1 or more years
Sample:						
a.						
b.						
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						

What is this job?	Can _____ do it?			Do you need training?		
	a man	a woman	either	no	yes, up to 1 year	yes, 1 or more years
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						
21.						
22.						
23.						
24.						
25.						